

## CONTENTS

EXECUTIVE SUMMARY .....	iii
ACRONYMS .....	xi
DEFINITIONS .....	xv
1. INTRODUCTION .....	1-1
1.1 Organization of the Report .....	1-3
1.2 Site Mission .....	1-4
1.3 Status of Cleanup Program .....	1-5
2. RISK-BASED END STATE VISION: REGIONAL CONTEXT .....	2-1
2.1 Physical and Surface Interface.....	2-1
2.2 Human and Ecological Land Use .....	2-4
3. SITE-SPECIFIC RISK-BASED END STATE DESCRIPTION .....	3-1
3.1 Physical and Surface Interface.....	3-1
3.2 Human and Ecological Land Use .....	3-4
3.2.1 Ecological Resources Preservation .....	3-4
3.2.2 Cultural Resources Preservation .....	3-4
3.2.3 Environmental Research .....	3-5
3.2.4 Grazing .....	3-5
3.2.5 Hunting .....	3-8
3.3 Site Context Legal Ownership .....	3-8
3.4 Site Context Demographics .....	3-10
4. HAZARD-SPECIFIC DISCUSSION.....	4-1
4.1 Sitewide Soil and Groundwater .....	4-4
4.1.1 Sitewide Soil .....	4-4
4.1.2 Groundwater .....	4-22
4.2 Test Area North .....	4-27
4.2.1 Current State .....	4-28
4.2.2 End State .....	4-31
4.2.3 Variances .....	4-32

4.3	Idaho Nuclear Technology and Engineering Center.....	4-44
4.3.1	Current State .....	4-44
4.3.2	End State .....	4-49
4.3.3	Variances .....	4-51
4.4	Radioactive Waste Management Complex.....	4-62
4.4.1	Current State .....	4-63
4.4.2	End State .....	4-65
4.4.3	Variances .....	4-66
4.5	Central Facilities Area .....	4-71
4.5.1	Current State .....	4-71
4.5.2	End State .....	4-73
4.5.3	Variances .....	4-73
4.6	Waste Reduction Operations Complex, Power Burst Facility, and Auxiliary Reactor Area.....	4-81
4.6.1	Current State .....	4-83
4.6.2	End State .....	4-84
4.6.3	Variances .....	4-85
4.7	Test Reactor Area .....	4-94
4.7.1	Current State .....	4-95
4.7.2	End State .....	4-97
4.7.3	Variances .....	4-98
4.8	Argonne National Laboratory-West .....	4-106
4.8.1	Current State .....	4-107
4.8.2	End State .....	4-107
4.8.3	Variances .....	4-108
5.	VARIANCES .....	5-1
6.	REFERENCES .....	6-1

## FIGURES

2-1.	The Snake River Plain.....	2-2
2-1a.	Regional physical and surface interface—current state .....	2-3
2-2a.	Regional human and ecological land use—current state.....	2-5

2-2b.	Regional human and ecological land use—risk-based end state .....	2-6
3-1a.	Site physical and surface interface—current state.....	3-3
3-2a.	Site human and ecological land-use map—current state.....	3-7
3-3a.	Site legal ownership—current state.....	3-9
3-4a.	Site demographics—current state.....	3-11
4-1a2a.	Site ecological receptors conceptual site model—current state .....	4-10
4-1a1b.	Sitewide soil map—current state.....	4-13
4-1a2b.	Sitewide soil conceptual site model—current state .....	4-14
4-1b1b.	Sitewide soil map—risk-based end state .....	4-18
4-1b2b.	Sitewide soil conceptual site model—risk-based end state .....	4-19
4-1c.	Idaho National Engineering and Environmental Laboratory water table .....	4-24
4-1a1c.	Sitewide groundwater map—current state.....	4-25
4-1b1c.	Sitewide groundwater map—risk-based end state .....	4-26
4-2.	Aerial view of the Technical Support Facility at Test Area North with the Contained Test Facility in the background.....	4-27
4-2a1.	Test Area North map—current state.....	4-33
4-2a2a.	Test Area North conceptual site model—current state.....	4-34
4-2a2b.	Test Area North groundwater conceptual site model—current state.....	4-36
4-2b1.	Test Area North map—risk-based end state.....	4-38
4-2b2a.	Test Area North conceptual site model—risk-based end state .....	4-39
4-2b2b.	Test Area North groundwater conceptual site model—risk-based end state .....	4-42
4-3.	Aerial view of the Idaho Nuclear Technology and Engineering Center .....	4-45
4-3a1a.	Idaho Nuclear Technology and Engineering Center map—current state .....	4-52
4-3a1b.	Idaho Nuclear Technology and Engineering Center facility detail map— current state .....	4-53
4-3a2.	Idaho Nuclear Technology and Engineering Center conceptual site model— current state .....	4-54
4-3b1a.	Idaho Nuclear Technology and Engineering Center map—risk-based end state .....	4-58

4-3b1b.	Idaho Nuclear Technology and Engineering Center facility detail map—risk-based end state .....	4-59
4-3b2.	Idaho Nuclear Technology and Engineering Center conceptual site model—risk-based end state .....	4-60
4-4.	Aerial view of the Radioactive Waste Management Complex.....	4-62
4-4a1a.	Radioactive Waste Management Complex map—current state .....	4-67
4-4a1b.	Radioactive Waste Management Complex facility detail map—current state.....	4-68
4-4a2.	Radioactive Waste Management Complex conceptual site model—current state .....	4-69
4-5.	Aerial view of the Central Facilities Area.....	4-71
4-5a1.	Central Facilities Area map—current state .....	4-74
4-5a2.	Central Facilities Area conceptual site model—current state .....	4-75
4-5b1.	Central Facilities Area map—risk-based end state.....	4-78
4-5b2.	Central Facilities Area conceptual site model—risk-based end state.....	4-79
4-6.	Aerial view of the Waste Experimental Reduction Facility with the Control Area shown in the distance .....	4-82
4-6a1.	Waste Reduction Operations Complex, Power Burst Facility, and Auxiliary Reactor Area map—current state .....	4-86
4-6a2.	Waste Reduction Operations Complex, Power Burst Facility, and Auxiliary Reactor Area conceptual site model—current state .....	4-87
4-6b1.	Waste Reduction Operations Complex, Power Burst Facility, and Auxiliary Reactor Area map—risk-based end state .....	4-90
4-6b2.	Waste Reduction Operations Complex, Power Burst Facility, and Auxiliary Reactor Area conceptual site model—risk-based end state .....	4-91
4-7.	Aerial view of the Test Reactor Area.....	4-94
4-7a1.	Test Reactor Area map—current state .....	4-99
4-7a2.	Test Reactor Area conceptual site model—current state.....	4-100
4-7b1.	Test Reactor Area map—risk-based end state.....	4-103
4-7b2.	Test Reactor Area conceptual site model—risk-based end state.....	4-104
4-8.	Aerial view of Argonne National Laboratory-West .....	4-106
4-8a1.	Argonne National Laboratory-West map—current state.....	4-109

4-8a2.	Argonne National Laboratory-West conceptual site model—current state.....	4-110
4-8b1.	Argonne National Laboratory-West map—risk-based end state.....	4-112
4-8b2.	Argonne National Laboratory-West conceptual site model— risk-based end state .....	4-113

## TABLES

4-1a.	Summary of exposure media and ingestion routes for Idaho National Engineering and Environmental Laboratory functional groups .....	4-12
4-1b.	Idaho National Engineering and Environmental Laboratory Sitewide groundwater plumes— current state outermost contour values and constituents.....	4-23
5-1.	Variance table .....	5-2
5-2.	Remaining scope of cleanup work at the Idaho National Engineering and Environmental Laboratory Site .....	5-5

